

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A flow through method for forming an embedded cell block, comprising:
automatically providing delivering a flow-through cell sample to a filter, the filter capturing at least a portion of the cell sample; ~~block-embedding apparatus, comprising:~~
~~a cell flow pathway defined by an inflow tube for delivering cell fragments from a cell sample to a sample port, the sample port being in fluid communication with a tissue cassette having attached thereto a filter, the cell flow pathway being configured so that, upon the application of pressure, the cell fragments are drawn from the cell sample through the inflow tube to the sample port and deposited onto the filter; and—~~
~~a reagent flow pathway defined by a plurality of reagent delivery tubes for delivering the reagents to a reagent port in communication with the sample port, the reagent flow pathway being configured so that, upon the application of pressure, the reagents are drawn through the reagent delivery tubes to the reagent port and to the deposited cell fragments on the filter;~~
~~depositing a sample of cell fragments onto the filter;~~
~~flowing a first reagent through the captured portion of the cell sample and through the filter to dehydrate the cell sample remove water and fatty substances from the sample;~~
~~flowing a second reagent through the captured portion of the cell sample and through the filter to remove the first reagent; and~~
~~flowing an embedding solution through the captured portion of the cell sample and through the filter to form an embedded cell block.~~
2. (Original) The method of claim 1, wherein the first reagent is alcohol.
3. (Original) The method of claim 1, wherein the second reagent is selected from the group consisting of xylene and diphenyl ether.
4. (Original) The method of claim 3, wherein the second reagent has a triple point near room temperature and one atmosphere pressure.

5. (Currently amended) The method of claim 3, wherein the second reagent is allowed to evaporate prior to ~~the addition~~ said flowing of an embedding solution.
6. (Currently amended) The method of claim 1, wherein the embedding solution is liquefied ~~melted~~ paraffin.
7. (Currently amended) The method of claim 1, further comprising: including the step of staining the cell sample prior to ~~adding said flowing the of an~~ embedding solution.
8. (Currently amended) The method of claim 7, wherein ~~the step of said staining~~ comprises ~~includes~~ flowing a staining solution through the captured portion of the cell sample and through the filter.
9. Canceled
10. (Currently amended) The method of claim 1, further comprising: including the step of flowing a preservative through the captured portion of the cell sample and through the filter ~~prior to adding the embedding solution.~~
11. (Original) The method of claim 10, wherein the preservative is formalin.
12. (Currently amended) The method of claim 1, further comprising: including the step of flowing a decalcifying solution through the captured portion of the cell sample and the filter ~~the sample prior to adding the embedding solution.~~
13. Canceled
14. Canceled

15. (Currently amended) The method of claim 1, wherein at least one of said flowing the first reagent, flowing the second reagent, or flowing the embedding solution, includes drawing the first reagent, the second reagent, or the embedding solution through the filter under ~~the sample is deposited by the application of~~ a negative pressure.

16. (Currently amended) The method of claim ~~[[1]]~~ 15, wherein said automatically delivering the cell sample includes automatically flowing the cell sample through a pipette ~~is deposited by the application of a positive pressure.~~

17. (Currently amended) The method of claim 1, wherein said flowing the first reagent includes flowing the first reagent through a pipette ~~a negative pressure is applied to effect flow of the reagents and embedding solution.~~

18. (Currently amended) The method of claim 1, wherein said flowing the second reagent includes flowing the second reagent under ~~a positive pressure is applied to effect flow of the reagents and embedding solution.~~

19-25. Canceled

26. (New) The method of claim 1, further comprising:
solidifying the embedding solution to form an embedded cell block; and
separating the filter from the embedded cell block.

27. (New) The method of claim 26, further comprising:
re-melting at least a portion of a surface of the embedded cell block.

28. (New) The method of claim 27, further comprising:
cooling a surface of the embedded cell block to re-harden the surface.

29. (New) The method of claim 26, wherein a spacer is positioned adjacent the filter, and wherein said separating the filter includes separating the spacer from the embedded cell block.
30. (New) The method of claim 1, further comprising:
heating the filter.
31. (New) The method of claim 1, further comprising:
cooling the filter.
32. (New) The method of claim 1, further comprising:
monitoring a level of at least one of the first reagent, the second reagent, or the embedding solution, relative to the captured cell sample.
33. (New) The method of claim 1, wherein said flowing the first reagent and said flowing the second reagent include keeping the cell sample immersed in at least one of the first and the second reagents.
34. (New) The method of claim 1, further comprising:
receiving the first reagent or the second reagent that has flowed through the filter in a waste container; and
comparing a weight of the first or second reagent received in the waste container to a weight of the first or second reagent that flowed through the captured cell sample.
35. (New) The method of claim 1, wherein at least one of said flowing a first reagent, a second reagent, or an embedding solution, involves a combination of positive and negative pressure.
36. (New) The method of claim 1, further including monitoring the flow rate of the first reagent, the second reagent and/or the embedding solution.

37. (New) The method of claim 1, further including monitoring the refractive index of the first reagent, the second reagent and/or the embedding solution that flowed through the filter.
38. (New) A method of forming an embedded cell block, comprising:
providing a cassette that includes a filter, the filter configured to capture at least a portion of a cell sample;
providing an automated system, the automated system including;
a support for the cassette;
automated delivery of a cell sample from a cell sample source;
automated delivery of a first reagent from a first reagent source;
automated delivery of a second reagent from a second reagent source; and
automated delivery of an embedding solution from an embedding solution source;
mounting the cassette to the support;
delivering automatically a cell sample to the filter;
delivering automatically a first reagent from the first reagent source to the captured cell sample and through the filter;
delivering automatically a second reagent from the second reagent source to the captured cell sample and through the filter; and
delivering automatically an embedding solution from the embedding solution source to the captured cell sample.
39. (New) The method of claim 38, wherein the automated system includes at least one pipette tip, and further wherein said delivering automatically the cell sample includes automatically delivering the cell sample through the at least one pipette tip to the filter.
40. (New) The method of claim 39, wherein said delivering automatically the first reagent includes delivering automatically the first reagent through a pipette tip and drawing the first reagent through the filter under a negative pressure.

41. (New) The method of claim 40, wherein said delivering automatically the second reagent includes delivering automatically the second reagent through a pipette tip and drawing the second reagent through the filter under a negative pressure.
42. (New) The method of claim 41, wherein said step of delivering automatically the embedding solution includes delivering automatically the embedding solution through a pipette tip and drawing the embedding solution through the filter under a negative pressure.
43. (New) The method of claim 38, wherein substantially all of the second reagent is allowed to evaporate prior to said delivering automatically an embedding solution.
44. (New) The method of claim 38, further comprising:
removing the filter from the cassette to expose a surface of the embedded cell block.
45. (New) The method of claim 44, further comprising:
re-melting at least a portion of the embedded cell block.
46. (New) The method of claim 38, further comprising:
heating the filter.
47. (New) The method of claim 46, further comprising:
cooling the filter.
48. (New) The method of claim 38, further comprising:
monitoring a level of the first reagent, the second reagent, and/or the embedding solution delivered to the cell sample.

49. (New) The method of claim 38, wherein said delivering automatically the first reagent and said delivering automatically the second reagent include delivering automatically the first and second reagents so that the cell sample remains immersed in at least one of the first and the second reagents.
50. (New) The method of claim 38, wherein the automated system includes a waste container that receives reagent that has passed through the filter, the method further comprising:
comparing a weight of reagent received in the waste container to a weight of reagent delivered to the cell sample.
51. (New) The method of claim 38, wherein at least one of said delivering automatically a first reagent, said delivering automatically a second reagent, and said delivering automatically an embedding solution, includes a combination of positive and negative pressure.
52. (New) The method of claim 38, further including the step of monitoring the refractive index of the first reagent, the second reagent and/or the embedding solution that has been delivered through the filter.
53. (New) A flow through method for forming an embedded cell block, comprising:
delivering a cell sample to a filter, the filter capturing at least a portion of the cell sample;
flowing a first reagent through the captured portion of the cell sample and the filter to dehydrate the cell sample;
flowing a second reagent through the captured portion of the cell sample and the filter to remove the first reagent;
flowing an embedding solution through the captured portion of the cell sample and the filter; and
heating the embedding solution about the captured portion of the cell sample.

54. (New) The method of claim 53, wherein the filter is adjacent to a thermally conductive filter support and said heating the embedding solution includes heating the thermally conductive filter support.
55. (New) The method of claim 54, further comprising:
cooling the embedding solution by removing heat through the thermally conductive filter support.
56. (New) The method of claim 53, further comprising:
cooling the embedding solution about the captured portion of the cell sample.
57. (New) The method of claim 53, wherein the first reagent is alcohol.
58. (New) The method of claim 53, wherein the second reagent is selected from a group consisting of xylene and diphenyl ether.
59. (New) The method of claim 58, wherein the second reagent is allowed to evaporate prior to the addition of embedding solution.
60. (New) The method of claim 53, wherein the embedding solution is liquefied paraffin.
61. (New) The method of claim 53, further comprising:
staining the captured portion of the cell sample prior to flowing the embedding solution.
62. (New) The method of claim 61, wherein staining comprises flowing a staining solution through the captured portion of the cell sample and the filter.
63. (New) The method of claim 53, further comprising:
flowing a preservative through the captured portion of the cell sample and the filter.

64. (New) The method of claim 63, wherein the preservative is formalin.
65. (New) The method of claim 53, further comprising:
flowing a decalcifying solution through the captured portion of the cell sample and the filter.
66. (New) The method of claim 53, wherein at least one of said flowing the first reagent, flowing the second reagent, or flowing the embedding solution, includes drawing the first reagent, the second reagent, or the embedding solution through the filter under a negative pressure.
67. (New) The method of claim 53, wherein said step of flowing the first reagent includes flowing the first reagent through a pipette.
68. (New) The method of claim 53, wherein said step of flowing the second reagent includes flowing the second reagent by application of a positive pressure.
69. (New) The method of claim 53, further comprising:
separating the filter from the embedded cell block to expose a surface of the embedded cell block.
70. (New) The method of claim 69, further comprising:
re-melting at least a portion of the surface.
71. (New) The method of claim 70, further comprising:
cooling a portion of the surface of the embedded cell block.
72. (New) The method of claim 69, wherein a spacer is positioned adjacent the filter, and wherein said separating the filter includes separating the spacer from the embedded cell block.

73. (New) The method of claim 53, further comprising:
monitoring a level of at least one of the first reagent, the second reagent, or the embedding solution, relative to the captured cell sample..
74. (New) The method of claim 53, wherein said flowing the first reagent and said flowing the second reagent include keeping the cell sample immersed in at least one of the first and the second reagents.
75. (New) The method of claim 53, further comprising:
receiving the first reagent or the second reagent that has flowed through the filter in a waste container; and
comparing a weight of the first or second reagent received in the waste container to a weight of the first or second reagent that flowed through the captured cell sample.
76. (New) The method of claim 53, wherein at least one of said flowing a first reagent, flowing a second reagent, or flowing an embedding solution, includes a combination of positive and negative pressure.
77. (New) The method of claim 53, further including monitoring the flow rate of the first reagent, the second reagent and/or the embedding solution.
78. (New) The method of claim 53, further including monitoring the refractive index of the first reagent, the second reagent and/or the embedding solution that flowed through the filter.
79. (New) A method of forming an embedded cell block, comprising:
providing a cassette that includes a filter, the filter configured to capture at least a portion of a cell sample;
providing an automated system, the automated system including;
a support for the cassette;

automated delivery of a first reagent from a first reagent source;
automated delivery of a second reagent from a second reagent source; and
automated delivery of an embedding solution from an embedding solution source;
mounting the cassette to the support;
delivering a cell sample to the filter;
delivering automatically a first reagent from the first reagent source to the captured cell sample and through the filter;
delivering automatically a second reagent from the second reagent source to the captured cell sample and through the filter;
delivering automatically an embedding solution from the embedding solution source to the captured cell sample; and
heating the embedding solution about the captured cell sample.

80. (New) The method of claim 79, wherein the cassette includes a thermally conductive filter support and said step of heating the embedding solution includes heating the thermally conductive filter support.

81. (New) The method of claim 80, further comprising:
cooling the embedding solution about the captured cell sample by removing heat through the thermally conductive filter support.

82. (New) The method of claim 81, wherein the automated system includes at least one pipette tip, and further wherein said delivering automatically the first reagent includes delivering automatically the first reagent through a pipette tip and drawing the first reagent through the filter under a negative pressure.

83. (New) The method of claim 82, wherein said delivering automatically the second reagent includes delivering automatically the second reagent through a pipette tip and drawing the second reagent through the filter under a negative pressure.

84. (New) The method of claim 83, wherein said delivering automatically the embedding solution includes delivering automatically the embedding solution through a pipette tip and drawing the embedding solution through the filter under a negative pressure.
85. (New) The method of claim 79, wherein substantially all of the second reagent is allowed to evaporate prior to said delivering automatically the embedding solution.
86. (New) The method of claim 79, further comprising:
removing the filter from the cassette to expose a surface of the embedded cell block.
87. (New) The method of claim 86, further comprising:
re-melting at least a portion of the embedded cell block.
88. (New) The method of claim 79, wherein said delivering automatically the first reagent and said delivering automatically the second reagent include delivering automatically the first and second reagents so that the cell sample remains immersed in at least one of the first and the second reagents.
89. (New) The method of claim 79, wherein the automated system includes a waste container that receives reagent that has passed through the filter, the method further comprising:
comparing a weight of reagent received in the waste container to a weight of reagent delivered to the cell sample.
90. (New) The method of claim 79, wherein at least one of said delivering automatically a first reagent, delivering automatically a second reagent, or delivering automatically an embedding solutions involves a combination of positive and negative pressure.
91. (New) The method of claim 79, further including monitoring the flow rate of the first reagent, the second reagent and/or the embedding solution.

92. (New) The method of claim 79, further including monitoring the refractive index of the first reagent, the second reagent and/or the embedding solution that has been delivered through the filter

93. (New) The method of claim 79, wherein said delivering the cell sample comprises delivering automatically the cell sample to the filter.

94. (New) The method of claim 53, wherein said delivering the cell sample to the filter comprises automatically delivering the cell sample to the filter.